

**THE WALL BROWN *LASIOMMATA MEGERA* L. (LEP.: NYMPHALIDAE)
IN CENTRAL ENGLAND, 1997-1999**

CHRIS TYLER-SMITH

Northview, North Lane, Weston-on-the Green, Bicester, Oxon OX6 8RG.

THE WALL BROWN has declined more than any other common butterfly within the last few years (Fox and Asher, 1999; Goodhand, 1999), but the causes are unknown. This study reports its current abundance in one region of central southern England, where the decline has been greatest, and identifies the habitats where it does survive.

The abundance of the Wall Brown was measured during 1997, 1998 and 1999 as part of a survey for the *Millennium Butterfly Atlas*. The area covered lay largely within northern Oxfordshire and northern Buckinghamshire, but included a few records from southern Northamptonshire. Recording consisted of visiting one kilometre squares and counting the numbers of adult butterflies seen; exact, rather than approximate, numbers were used. A total of 747 successful visits were made, in each of which at least one butterfly was identified to the species level, and a total of 15,077 individual butterflies was recorded (Table 1). This is a slight underestimate of the total seen, because some individuals of some species (Small White/Green-veined White/female Orange Tip; Small Skipper/Essex Skipper) could not be identified to species level and were therefore not included.

Thirty-four species were recorded. Among them were two Wall Browns (Table 1), which thus made up 0.013% of the total. Only the Black Hairstreak and Clouded Yellow were recorded less frequently (one each); eight "key" species within the area (as defined by Asher, 1994: Grizzled Skipper, Wood White, Green Hairstreak, Purple Hairstreak, White-letter Hairstreak, Small Blue, Brown Argus and White Admiral) were more abundant. The Wall Brown thus remains within the area surveyed, but at a very low level.

A subset of 25 tetrads in ten-kilometre grid squares SP 51 and SP 52, which received an average of 12 visits each (range 8 – 20), were considered well-recorded and were analysed further. Change during the last 20 years was evaluated by comparison with two previous tetrad surveys: Knight and Campbell (1986) for the period 1980-1985, and Asher (1994) for the period 1987-1992. The first survey found the Wall Brown in eight of the 25 selected tetrads (32%); the second recorded it in three (12%), while the present survey found it in only one (4%). Thus the Wall has declined in this area during the last 20 years, as it has done nationally. These figures reflect both the abundance of the butterfly and the recording effort. If the presence of the widespread and common Meadow Brown is used as an indicator of effort, the ratios of tetrads containing the Wall Brown: tetrads containing the Meadow Brown are 8:11, 3:23 and 1:25 respectively. Thus the first survey was incomplete and the decline is even more marked than revealed by the raw figures.

Current habitat preferences within the area were investigated. The 25 selected tetrads were ranked in three different ways: according to total number of individual

butterflies recorded, mean number of individuals per visit, or total number of species. These ranged from 854 to 60 individuals in total (mean 316), 68 to 8 individuals on average per visit (mean 26) and 26 to 14 total species (mean 19). The tetrad containing the Wall Brown was ranked sixteenth according to the number of individuals encountered, twelfth according to the number of individuals per visit and eighteenth according to the number of species. Thus the Wall's habitat was average to poor as defined by these indicators of "butterfly quality". Similarly, there were 32 occurrences of key species within the area (some consisting of more than one individual), but none in the tetrad containing the Wall Brown. It was seen in intensively-farmed agricultural land at the edge of a village, a poor environment for most butterflies. The second Wall Brown record was from a less thoroughly recorded tetrad, but was again in a poor butterfly environment lacking key species, at the side of a road passing through intensively-farmed agricultural land.

Table 1. Summary of butterfly records.

Year	Number of visits	Total butterflies	Wall Browns
1997	257	7,780	1
1998	203	3,205	1
1999	287	4,092	0
Totals	747	15,077	2

Thus within this area of central southern England, the Wall Brown has declined substantially during the last 20 years, and is now rarer than many key species. The only remaining Walls were found in unattractive agricultural habitats. The reasons for their survival in these environments, but apparently not elsewhere, require further investigation.

References

- Asher, J., 1994. *The Butterflies of Berkshire, Buckinghamshire and Oxfordshire*. Pisces Publications.
- Fox, R. and Asher, J., 1999. *Butterflies for the New Millennium 1999, Provisional Atlas*. 2nd Edition. ITE.
- Goodhand, A., 1999. The mysterious decline of the Wall Brown (*Lasiommata megera*). *Butterfly Conservation News* 71, 7.
- Knight, R. and Campbell, J. M., 1986. *An Atlas of Oxfordshire Butterflies*. Oxfordshire County Council.